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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/581,009

05/30/2006

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298-311

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01/04/2010

EXAMINER

MENDEZ, ZULMARIAM

ART UNIT

PAPER NUMBER

1795

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DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/581,009	<b>Applicant(s)</b> ROINER, FRANZ	
	<b>Examiner</b> ZULMARIAM MENDEZ	<b>Art Unit</b> 1795	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 May 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>05/30/2006</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6, 8-10, 12 and 14-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Sampson.

With regard to claims 1-5, Sampson discloses an electrolytic process for oxidizing or reducing species in dilute aqueous solutions (abstract) comprising the steps of electrolytically treating a liquid, such as water (page 4, lines 13-21), adhering to a substance/ion exchange membrane present in the liquid one or more gases, such as hydrogen and oxygen (page 3, lines 1-38 and 42-47; page 6, lines 41-50).

With regard to claim 6, Sampson teaches wherein the ion exchanger is an acid ion exchanger (page 5, lines 22-27).

With regard to claim 8, Sampson discloses wherein the ion exchanger comprises a matrix, active groups and ions to be exchanged (page 6, lines 41-50).

With regard to claims 9 and 10, Sampson teaches wherein the ion exchanger contains catalytically acting substances (page 3, lines 42-55).

With regard to claim 12, Sampson discloses wherein the ion exchanger is kept in suspension in the liquid (page 4, lines 13-17; figure 2).

With regard to claim 14, Sampson teaches wherein the method is carried out in

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multiple stages (page 11, lines 15-38).

With regard to claim 15, Sampson discloses an electrolytic process for oxidizing or reducing species in dilute aqueous solutions (abstract) comprising a container/reactor (20) comprising a liquid, such as water (page 4, lines 13-21) in which a substance (28) is present to which one or more gases to be produced adheres (page 3, lines 1-38 and 42-47; page 6, lines 41-50); and a positive electrode (22) and a negative electrode (24; see figure 2) structured and arranged to connected to a power source/external circuit shown in figure 2.

With regard to claim 16, Sampson teaches wherein an electrode is tubular in design (page 5, lines 6-12).

With regard to claim 17 and 19, Sampson discloses wherein a filler material is present (page 5, lines 13-58) inside the tubular electrode in the liquid containing the gas to be produced and a substance to which the era gas to be produced adheres (figure 2 shows ion exchange material 26, 28 within the system).

With regard to claims 18 and 20, Sampson teaches wherein an acid is present in the filler material (page 5, lines 22-27).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sampson, as discussed above, in view of Matsumura et al. (US Patent Application Publication no. 2005/0070840).

With regard to claim 7, Sampson teaches all of the limitations discussed above, but fails to disclose wherein the ion exchanger is of gel-like form.

Matsumura discloses a method in which water electrolyzed to produce oxygen and hydrogen (page 8, paragraph 180) in which a gel type ion exchange membrane is used in order to improve conductivity of the membrane (page 13, paragraph 282).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to use a gel-like ion membrane, as taught by Matsumura, in the method of Sampson, in order to improve its conductivity.

6. Claims 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sampson, as discussed above, in view of Tokuyama (JP 59092028).

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With regard to claims 11 and 13, Sampson discloses all of the limitations, as discussed above but fails to teach wherein the ion exchanger is kept in motion and is supplied continuously.

Tokuyama teaches a method and apparatus for the treatment of a liquid in which an ion exchange resin is immersed in said liquid to be treated is supplied continuously and kept in motion (see arrows indicating movement of ion exchange resins in figure 1) in order to enhance contact efficiency of a liquid to be treated (abstract). Therefore, one having ordinary skill in the art at the time of the invention would have found it obvious to modify the method of Sampson, as taught by Tokuyama, in order to enhance contact efficiency of a liquid to be treated.

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ZULMARIAM MENDEZ whose telephone number is (571)272-9805. The examiner can normally be reached on Monday-Friday from 9am to 5pm.

8. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer Michener can be reached on 571-272-1424. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Harry D Wilkins, III/  
Primary Examiner, Art Unit 1795

/Z. M./  
Examiner, Art Unit 1795